

# PSS®SINCAL – efficient planning software for electricity and pipe networks

Siemens PTI – Software Solutions

Answers for energy.

**SIEMENS**

# PSS®SINCAL – efficient planning of utility & industry networks

Comprehensive network planning and analysis are essential for utility companies as well as industrial network operators, generating companies, and engineering consulting firms. Performing this can be a time-consuming business. To facilitate the planning and design of supply networks as much as possible, Siemens has designed PSS®SINCAL, a high-performance tool for the planning of electricity, gas, water, and district heating networks.

In over 50 years of experience, Siemens has optimized PSS®SINCAL in close cooperation with the users and is the world-wide leading provider of system planning software. PSS®SINCAL is a highly versatile tool with standardized interfaces for easy data import and export, and offers the possibility to maintain various data in one single system. It is the perfectly suited and highly efficient tool for anyone who has to perform planning and analysis of utility and industrial networks.

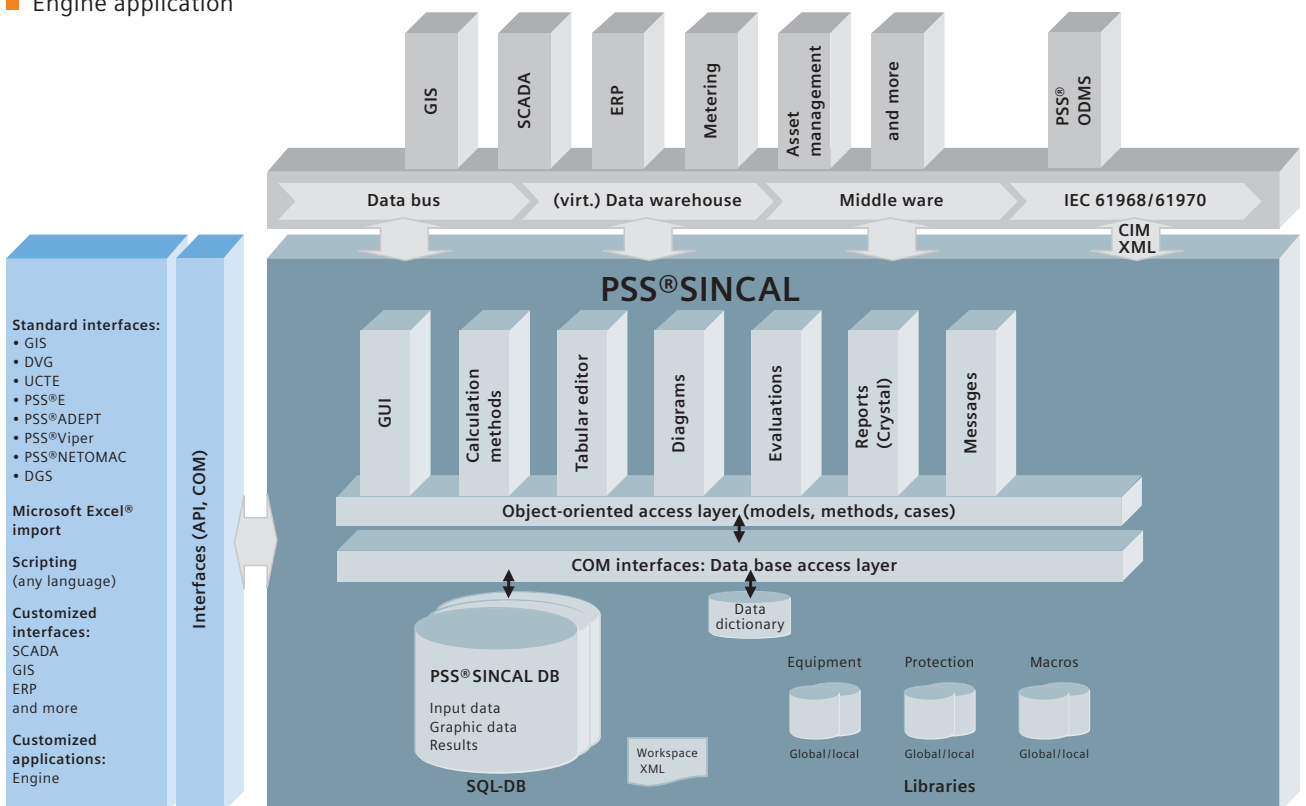
## PSS®SINCAL architecture – fast and easy integration into any IT environment

PSS®SINCAL is equipped with numerous interfaces to allow simple integration into your IT environment. The use of open or commercial databases permits direct data exchange with other systems like:

- GIS
- SCADA
- ERP (e.g., SAP)
- Asset management
- Engine application

even by standard protocols such as CIM (IEC 61968/61970) including version 10 to 14 (UCTE).

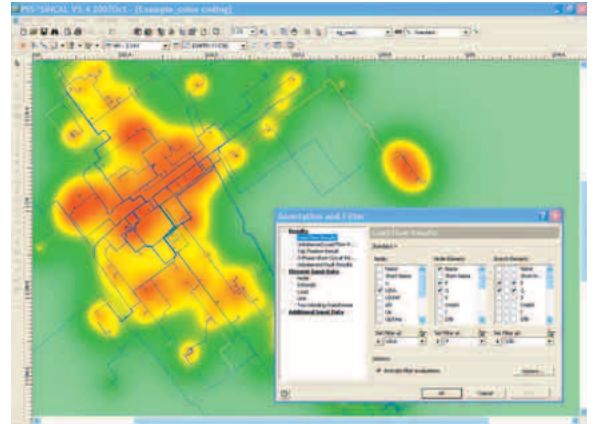
The open architecture, based on COM servers, also allows the generation of custom applications using PSS®SINCAL as an engine.



# PSS®SINCAL – a customizable solution

With PSS®SINCAL we offer a state-of-the-art full-range network analysis software solution that will greatly facilitate all your network planning tasks. PSS®SINCAL can handle the planning and analysis for electrical as well as pipe networks, i.e. water, gas, and district heating systems. This makes it an optimal solution for both industry and utilities.

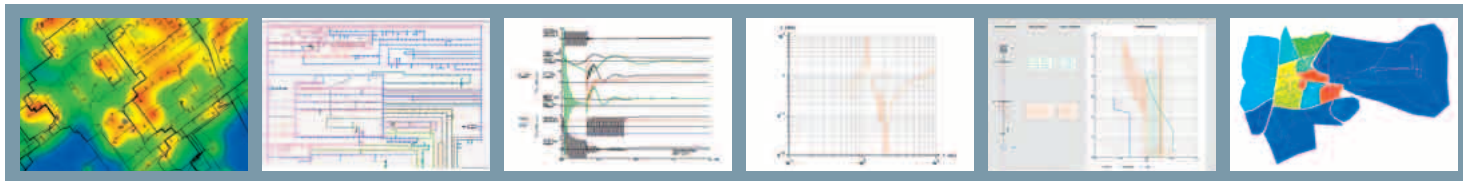
The modular and fully integrated structure of PSS®SINCAL allows for a high level of customization according to your individual needs. You can choose from a wide range of different modules and flexible license types.



Color-coded evaluation of network conditions and weak points

## Modules for electricity network planning

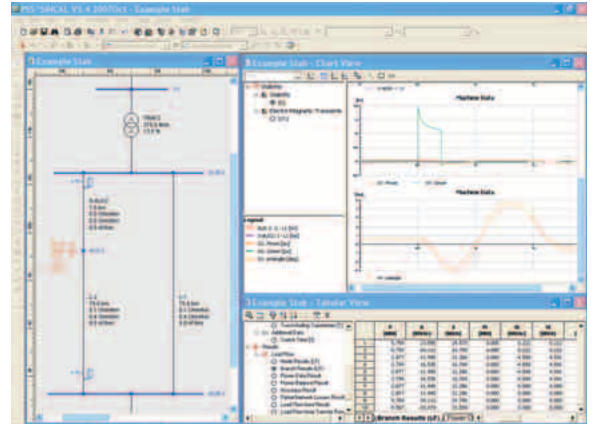
Basic Modules	Enhanced Modules	Time Domain	Frequency Domain	Protection	Strategy
Load Flow Balanced	Load Flow Unbalanced	Motor Start	Ripple Control	Distance Protection	Probabilistic Reliability
Short Circuit 3-phase IEC/VDE/ANSI/G74 or Pre-Fault Loading	Multiple Faults	Stability	Harmonic Response	Overcurrent Time Protection	Cost Calculation
Short Circuit 2-phase IEC/VDE/ANSI/G74 or Pre-Fault Loading	Dimensioning of LV Networks	Electromagnetic Transients EMT		Protection Simulation	Generation and Load Profiles
Short Circuit 1-phase IEC/VDE/ANSI/G74 or Pre-Fault Loading	Compensation Optimization	Contingency Analysis / Restoration of Supply	Eigenvalues / Modal Analysis	Arc Flash Hazard	Load Development
	Load Balancing	Load Flow Optimization	FACTS Models	Graphical Model Builder BOSL/NETCAD	Optimal Network Structures
	Optimal Branching	Load Allocation (Trim)/ Transformer Tap Detection	Generic Wind Models	Line Constants	



# PSS®SINCAL – a certified high-quality product

PSS®SINCAL provides the capability to solve also exceptional tasks with its high-quality algorithms optimized for both accuracy and performance. User-defined applications can be easily developed with its object-oriented data model. Sophisticated case and data management facilitate the handling of complex projects.

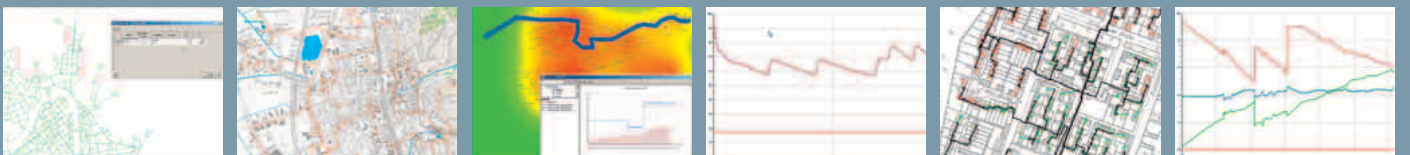
Backed by Siemens' commitment to product excellence and to provide efficient solutions as well as official certification, PSS®SINCAL meets the highest requirements of an international user base.



Stability study with results in diagram and spreadsheet view

## Modules for pipe network planning

Gas	Water	District Heating
Gas Steady State	Water Steady State (incl. Fire Water)	District Heating Steady State
	Water Tower Filling	
Gas Dynamic	Water Dynamic	District Heating Dynamic
Gas Contingency Analysis	Water Contingency Analysis	District Heating Contingency Analysis



# PSS<sup>®</sup>SINCAL – advantages at a glance



## User-friendly software ...

- simple and intuitive handling
- universal user interface for all fields – electricity, gas, water, district heating
- customizable to specific needs
- fully integrated modular structure and licensing
- Microsoft Windows<sup>®</sup> environment
- client-server architecture, internet ability
- multi-language user interface: English, German, Spanish, Chinese

## ... with high-level performance ...

- computation and evaluation of large networks
- efficient data management in a commercial database like Microsoft Access<sup>™</sup> or Oracle<sup>®</sup>
- object-orientated modeling of all equipment
- macro and scripting functionality for efficient automatization
- combined analysis of separately modeled networks

## ... and a wide range of interfaces ...

- fully documented open database
- numerous and different interface types
- easy import and export of network models, e.g.:
  - standard interface to Microsoft Excel<sup>®</sup>
  - customizable interfaces to GIS and SCADA systems
- single data repository eliminates data redundancy across applications

## ... for accurate and reliable technical results ...

- all technical analyses based on one network model
- interactive visualization of network models in schematic, geographic, and multi-layer plans
- direct viewing and editing of data in masks, tables, diagrams, network plans, reports, etc.
- toolbox for highlighting and enhanced processing of data
- advanced handling and analysis of planning scenarios

## ... to provide you measurable benefit!

- time and cost savings in network planning
- tailored training and individual support for specific network planning tasks
- simple integration with existing processes and workflows
- high data and documentation quality
- improvement of network performance and capital expenditure plans

Published by and copyright © 2010:  
Siemens AG  
Energy Sector  
Freyeslebenstrasse 1  
91058 Erlangen, Germany

Siemens AG  
Energy Sector  
Power Distribution Division  
Transmission and Distribution Services  
Power Technologies International  
Freyeslebenstrasse 1  
91058 Erlangen, Germany

Siemens Energy, Inc.  
Siemens Power Technologies International  
400 State Street  
P.O. Box 1058  
Schenectady, NY 12301-1058, USA  
Phone: +1 800 347-66 59

Siemens Transmission and Distribution Ltd  
Sir William Siemens House  
Princess Road  
Manchester, M20 2UR, United Kingdom

For more information, please contact  
our Customer Support Center.  
Phone: +49 180 524 70 00  
Fax: +49 180 524 24 71  
(Charges depending on provider)  
E-mail: [support.energy@siemens.com](mailto:support.energy@siemens.com)

Power Distribution Division  
Transmission and Distribution Services  
Order No. E50001-G730-A156-X-4A00  
Printed in Germany  
Dispo 19210, c4bs No. 7824  
fb 2812 481723 WS 07102.5

Printed on elementary chlorine-free  
bleached paper.

All rights reserved.  
Trademarks mentioned in this document  
are the property of Siemens AG, its affiliates,  
or their respective owners.

Subject to change without prior notice.  
The information in this document contains  
general descriptions of the technical options  
available, which may not apply in all cases.  
The required technical options should therefore  
be specified in the contract.